Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Improving Wireless
Emergency Alerts and
Community-Initiated Alerting

PS Docket No. 15-91

AC&C LLC REPLY COMMENTS

INTRODUCTION AND SUMMARY

The dockets for the original NPRM and for this FNPRM provide powerful support for the adoption of improved geotargeting through incorporation of device-assisted or device-enhanced Wireless Emergency Alerts ("WEA"). This upgrade will benefit citizens, Public Safety alert originators, and the wireless industry through the creation of a capability that can drive additional revenue, further providing an impetus for continuous upgrade to WEA. Public Safety organizations, representing areas large and small, urban and rural, have called for incorporating the intelligence and capabilities of mobile handsets into the WEA service. Several have said that it is the simplest and most effective way to significantly improve the Nation's WEA service. In particular, the letter from the Big City Emergency Managers group, representing the emergency managers protecting the citizens of the 15 largest cities in the country (and almost one-third of the country's population), is poignant. The group wrote to "voice our concern that a device-assisted geo-targeting capability timeline and requirement were not included in Commission's September 29th Wireless Emergency Alert (WEA) Report and Order, but instead referred to the Commission's accompanying Further Notice of Proposed Rulemaking for additional consideration. . . . We believe that more precise geo-targeting, the kind that will come from incorporating the intelligence in our handsets (and, we note, the kind that is used by countless Apps, like Uber, each day), will save lives. Moreover, such a move will engender system trust amongst both alert originators and the public. Precisely targeted messaging means that alerts and warnings can be personalized to a very high degree reducing, if not eliminating, recipient confusion."[1] Numerous Public Safety officials echoed these sentiments in the record.

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>
> **Big City Emergency Managers**

[1] Letter from Big City Emergency Managers, *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91; *Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94, at 1-2 (Nov 30, 2016).

In addition to wide-ranging support from Public Safety, as AC&C identified in its original comments the record is replete with academic studies, technology vendors, wireless carriers and more, including the CSRIC V body, detailing that a handset or device-assisted upgrade is eminently doable and makes sense.

Commissioner Pai's statement as part of the September Order summarized the key benefits to citizens and alert originators of incorporating the intelligence of the device into the existing WEA service. "By enabling devices to screen emergency messages and only allow the relevant ones through, this approach would allow public safety officials to target information to specific geographic areas. And it would advance WEA as a platform by reducing "alert fatigue.""[2] Incorporating the intelligence of the device into the service will drive immediate benefits and also will open the door for as-yet untold improvements to the WEA service and to citizens, Public Safety officials, and the wireless industry.

THE RECORD IN THIS PROCEEDING CONTAINS AN UNUSUALLY-DIVERSE RANGE OF SUPPORT FOR DEVICE-ASSISTED GEO-TARGETING

a. Introduction

A multitude of comments throughout the record, and memorialized in the recently-completed CSRIC V effort, clearly express a need for a roadmap to improve the capabilities of the WEA system, specifically the need for the WEA system to granular geo-target and geo-fence notifications.[3] A review of the record from the Commission's previous NPRM through the recently-adopted Order suggests that significantly improving geo-targeting through adoption and incorporation of a device-assisted enhancement to WEA may be the single most important change to the service. This issue has been raised by Public Safety officials from coast to coast,[4] from large community to small,[5] and from Public Safety Associations to a military base.[6] Additionally, a number of studies from academic institutions and technology companies suggest that a device-assisted upgrade not only is feasible, but also should not be a costly or time-consuming process. Perhaps most important, CSRIC V, comprised of numerous representatives from Public Safety, wireless carriers, technology providers, and more, developed and adopted a recommendation specifically setting a timeframe for development and incorporation of a device-assisted enhancement to WEA.

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[2] Statement of Commissioner Ajit Pai, *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91; *Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94 (Sept 29, 2016).

[3] Indiana Dept of HS, California Gov Office of Emergency Services, Pinellas County FL Emergency Management, U.S. Geological Survey, APCO International, Nevada Office of Emergency Management, NOAA/National Weather Service, City of Houston Mayor Office of Public Safety and Homeland Security, New York City Emergency Management Dept., Brevard County, FL Emergency Management , Kansas Division of Emergency Management, Jefferson Parish Emergency Management, Fort Riley Emergency Management.

[4] Douglas County WA to Brevard County FL.

[5] New York City Emergency Management to Vail Police Dept and Vail Public Safety.

[6] APCO to Fort Riley Emergency Management.

b. Significant and Wide-Ranging Public Safety Support for Device-Based WEA

Perhaps the most important element of the recent WEA record is the diverse and wide-ranging Public Safety support for a device-based enhancement to WEA. Police, Fire, Emergency Management, and State/County/Community leaders all have weighed in with the FCC in support of a device-enhanced WEA upgrade. These include:

- ***APCO International***
- ***Big City Emergency Managers Association***
- ***NOAA/National Weather Service***
- ***New York City Office of Emergency Management***
- ***City of Houston, Mayor's Office of Public Safety and Homeland Security***
- ***Harris County, Texas***
- ***City of Los Angeles, Emergency Management Department***
- ***Government of the District of Columbia, Homeland Security and Emergency Management Agency***
- ***City of Austin HS and EM***
- ***Seattle Office of Emergency Management***
- ***City and County of San Francisco Department of Emergency Management***
- ***City of New York Police Commissioner***
- ***City of New York Mayor's Office***
- ***New York City Fire Department***
- ***West Feliciana Parish Sheriff's Office, St. Francisville, Louisiana***
- ***Office of Emergency Management, Nassau County, NY***
- ***Boulder Regional Emergency Telephone Service Authority***
- ***Nevada Office of Emergency Management***
- ***Ventura County Sheriff, EOC***
- ***Brevard County, Florida Emergency Management***
- ***Jefferson Parish Emergency Management***

Public Safety officials from large city to small parish, north to south and east to west, have called for a device-assisted enhancement to WEA that will improve geo-targeting, make the service more effective and more useful to alert originators, and ultimately save lives.

c. Carrier Support for Device-Based WEA

In addition to the support from technology companies identified by AC&C in its Comments, the comments in this FNPRM from AT&T detailed how incorporating WEA into the application layer could improve the service. AT&T first states that while the FCC proposes to target alerts to the polygon level, "such precision is not possible using currently deployed cell broadcast infrastructure. . . . [U]nder present circumstances, if the alert polygon is smaller than a single cell site, it is impossible to transmit the WEA alert

and confine it only to those devices within the polygon and no others."[7] The answer may be a WEA app approach. AT&T stated that

> "[u]sing the new 360 character message length and a new message identification, the alert originator could craft a message for the managed WEA App that includes coordinates of the alert area. The managed WEA App could then take those messages and, if the user has enabled location services, determine the handset's location using existing capabilities and APIs available in the mobile device OS. Once the managed WEA App has identified the handset's location, it can determine whether the handset is in the alert area and display the message; if the handset is not in the area, it can ignore the message."[8]

AC&C has advocated in this record that connecting the WEA service to the device application layer will allow for a multitude of benefits, including enhanced geo-targeting. We agree with AT&T that moving some capabilities to the application layer is feasible. As their comments state, "AT&T is well aware of capabilities in mobile devices and device operating systems, as well as the APIs available to application developers. Such capabilities can be exploited in development of a managed WEA app."[9]

d. Academic Studies Investigating and Supporting Device-Based WEA

As discussed in AC&C's comments, the issue of a device-based approach was addressed multiple times. The record contains submissions from Carnegie Melon, Johns Hopkins University Applied Physics Lab, and the National Consortium for the Study of Terrorism and the Response to Terrorism (START) that address the feasibility of a device-based enhancement to WEA. Issues such as compression techniques that enable efficient transmission of polygons representing geographical targets using cell broadcast, that a device-based solution can improve the geo-targeting accuracy of WEA significantly without consuming excessive mobile device power or radio resources, that a device can be programmed to display an alert as a default when device is unable to determine its current location, and that high-resolution maps had a statistically significant and positive effect on public response outcomes including interpretation and personalization, and, hence, could have a positive effect on citizen behavior.

AC&C believes that the research contained in the studies confirms that a device-based solution not only is feasible, but also sensible. While work would need to be completed with the wireless carriers and handset manufacturers, the record suggests that this approach should strongly be considered.

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[7] AT&T Comments, *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91; *Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94 at 17-18, (Sept 29, 2016).

[8] Id. at 18-19.

[9] Id. at footnote 47.

THE COMMISSION SHOULD MOVE TO INCORPORATE DEVICE-ASSISTED GEO-TARGETING

As AC&C stated in its comments in December, the commitment by the Commission in the recent Order is a key first step. The work, however, is not completed. Commissioner Pai perhaps stated it best in his statement to the September Order, when he said that "[a]fter studying the record and speaking with public safety officials, including in New York City, I agreed that we need to do more than just codify the status quo. So I proposed that we be more forward-leaning, that we commit in this *Order* to moving ahead with a device-based approach to geo-targeting."[10] Commissioner Pai's call for the Commission to be more forward leaning is supported by the Commission's own CSRIC report.

The final report from CSRIC V might provide the most significant and compelling endorsement of a timely device-assisted upgrade to WEA, since the committee was comprised of leading public safety officials, wireless carriers, technology companies, and more. A main focus of CSRIC V was the investigation of handset-enhanced, or device-assisted, WEA. The leadership of CSRIC V established a working group specifically tasked with reviewing the issue and adopting recommendations, if possible, that would be brought before the entire group. After numerous meetings, multiple submissions, and debates and discussions among the members of the working group, a consensus document and set of recommendations were developed and presented to the full committee in early September of this year. After some moderate changes to the proposal, Recommendation 3 established a timeframe for development and deployment of a device-assisted solution.

Francisco Sanchez, Laison to the Director & Public Information Officer, Harris County Office of Homeland Security, chair of CSRIC V and co-chair of the working group that focused on improved geo-targeting, believed that "Recommendation 3 was discussed and agreed on by the working group to be action-oriented, with the robust timeframe for deployment on handsets provided by the carriers and ATIS members[, and that the] expectation was that the coordinated efforts discussed in Recommendation 3 would be part of the development and deployment process to ensure an enhanced solution would be in my handset in 42 months."[11]

Additionally, a September 21st *ex parte* from Michael Gerber, Physical Scientist, Office of Dissemination NOAA/National Weather Service, also memorializes the CSRIC V effort, and further confirms the thoughts of Public Safety, stated that "we co-authored the Working Group 2 Recommendations to Improve Geo-Targeting, including

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[10] Statement of Commissioner Ajit Pai, *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91; *Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94 (Sept 29, 2016).
[11] *Id.*

Recommendation #3, which specifically calls for deployment of these device assisted enhancements within 42 months of a Report and Order." [12]

CONCLUSION

The totality of the Commission's record in the NPRM and FNPRM suggest not only a strong demand for the significant benefits of a device-enhanced WEA, but also that the upgrade is technically feasible. The CSRIC V process drove to this conclusion as well, and established a timeframe for adoption of a device-enhanced solution. The Commission should head the calls of Public Safety officials from APCO, BCEM, NOAA, and numerous cities and counties throughout the country, and address the concerns of Public Safety by significantly enhancing the WEA service so that it delivers on its immense promise, while being low cost to wireless carriers and opening the door for a revenue-generating capability. By working together, we can incorporate this life-saving solution into the WEA service in the same timeframe as the other WEA upgrades adopted in the Commission's September Order.

[12] *Ex Parte* Filing from Michael E. Gerber, Wireless Emergency Alerts Proceeding 15-91 (September 21, 2016).